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ABSTRACT

In the spring of 1988, Massachusetts conducted its second Educational Assessment Program to assess the performance of students in grades 4, 8, and 12 in reading, mathematics, science, and social studies. Students' responses to open-ended questions in one form of the reading test were studied. One-twelfth of the fourth-graders, one-sixteenth of the eighth-graders, and one-twentieth of the 12th-graders tested received a test form that contained some open-ended questions. Student responses to 11 open-ended questions across the three grades are reviewed, along with sample test items. Several trends were apparent that have clear developmental and instructional implications. Students performed reasonably well when asked to interpret poetry, but had great difficulty with its formal and figurative aspects. Difficulty with figurative language was also apparent for nonfiction. Difficulties in abstraction persisted throughout the grades. Students generally performed well when asked to interpret the thoughts and actions of characters. Difficulties with the more external aspects of reading suggested a lack of familiarity with recognizing metaphor, identifying the effects of structural aspects of the text, and viewing the text as a genre in itself. An appendix classifies the open-ended questions according to the Massachusetts Framework for Reading Comprehension and presents results to enable comparison of students statewide. (SLD)

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CHAPTER 188

Massachusetts Educational Assessment Program

November 1989

ED317576

On Their Own:

Student Response to Open-Ended Tests in Reading

TM 014621

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On Their Own: Student Response to Open-Ended Tests in Reading

Elizabeth Badger

Brenda Thomas

Massachusetts Educational Assessment

Massachusetts Department of Education

1989

The Commonwealth of Massachusetts
Department of Education

1385 Hancock Street, Quincy, Massachusetts 02169-5183

November 8 1989

Dear Educator:

The four booklets in this series discuss the reading, mathematics, science and social studies results of the 1988 Massachusetts Educational Assessment Program. They represent one of the many efforts of the Department of Education to help schools carry out their educational mission more effectively. In this case, they provide models for student evaluation within the classroom, as well as describing students' progress in understanding.

The title of this series, **On Their Own**, suggests an important aim of education: the ability of students to act as independent, rational thinkers. The questions described in these booklets demand that ability. They demand active intelligence as students are required to relate what they know to new and challenging situations.

In addition to describing students' understanding, these booklets carry a message about the evaluation that goes on in the classrooms. The message is that the short objective tests of facts or procedures, standard fare in most classrooms, are too slight a vehicle to convey the true purpose of evaluation.

In the first place, effective student evaluation is an important component of effective teaching. Research has described the complex thinking that underlies students' errors and misconceptions. Unless teachers take the time to discover for themselves how students understand a subject, they will be unable to adjust their teaching in appropriate ways. This kind of evaluation, involving student discussion and explanation, should be a continuous and constant part of every classroom.

Secondly, evaluation can, and does, affect students' learning. Not only does it signal for the student the content areas that teachers consider important, it gives a message about the kind of thinking that is considered valuable. When testing is limited to short objective questions, requiring a single answer, the message given is that facts are what really count. When questions encourage students to think, to grapple with the material and to consolidate different aspects of learning, the message is much different. Such questions indicate to students that it is the quality of thought that is important, not the correctness of the answer itself. The possibility of different answers opens the door for discussion, argumentation, and intellectual excitement in our schools. This is the message that we want to convey to our students.

We hope that you will study the material included in this series and incorporate the ideas presented in your own classrooms.

Sincerely yours,

Harold Raynolds Jr

Harold Raynolds Jr.
Commissioner of Education

Acknowledgments

This report would not have been possible without the major contribution from members of the Reading Advisory Committee. These teachers and reading coordinators analyzed the responses for each question, read and scored the scripts, and interpreted the results with reference to both student achievement and school instruction. It was a major project, which they accomplished with competency, efficiency, grace and goodwill. If you find this book at all useful, it is they who should be thanked.

Members of the Reading Advisory Committee who contributed to making this booklet possible are:

Edward Sacco	**Reading Public Schools**
Judith Boyce	**Harvard Public Schools**
Jacqueline Kearns	**Arlington Public Schools**
Linda McMenimen	**Greater Lowell Voc-Tech**
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Elizabeth Badger
Brenda Thomas

Table of Contents

Foreword	1
Introduction	3
A Question of Answers	7
Summary and Conclusions	35
Appendix	39

Foreword

Robert J. Swartz
University of Massachusetts at Boston

As any good reader is aware, reading is not just the passive absorption of what is on the printed page. It is an active process whereby we create, extend, and reflectively assimilate meaning from what we read by selectively bringing to bear things that we already know and blending them with what we get from the text.

Even so, such a process may yield a superficial understanding of the text. Many people select little from what they already know. They relate this to what they are reading only in cursory ways. They form no strategies to enhance their comprehension. To achieve understanding, insight, and to gain information we are sure is accurate, we must use the most skillful thinking we can muster in connecting what we are reading to what we know and in determining its value. The best readers do this with ease. Those that don't nonetheless have the capability of doing it and can learn to.

Reading educators have, of course, acknowledged the role of active skillful thinking in relation to a text as the key to good reading for many years. But this has not always yielded an approach and well-articulated conception of the good thinker. Such a conception acknowledges the importance of the skillful use of ordinary thinking activities like predicting and generalizing, and the concomitant need to support interpretations of our experience and judgments about both fact and values. The good thinker is the critical and creative thinker.

Critical and creative thinking takes on a special form in reading a text. Alert readers continually adjust their understanding as they pick up clues about the type of text they are dealing with (external factors) and the way a particular text develops or unfolds (internal factors). Good reading is a function of the way these clues call up knowledge beyond the text and the way we actively

synthesize it with what we are reading by using the skills of critical and creative thought.

The impact of this approach on classroom instruction in reading is dramatic. In the new reading classroom, students engage directly with whole works and not worksheets. The thinking promoted in these classrooms is the thinking we would expect of any good thinker. It involves ordinary processes of thought done well, not just low-level decoding skills. This is accomplished as students read a work through the use of explicit thinking strategies. These engage students in careful thought about the text in ways that deliberately relate it to other information relevant to understanding and assessing what is being read.

In such thinking classrooms we find the continued use of appropriate questioning strategies, metacognitive techniques, and cooperative learning structures. These are the backbone of good thinking skills instruction – they enhance students' thoughtful reading as they do any form of thinking. The model of teaching critical thinking skills by infusing their use into rich content instruction provides the reading teacher with all the classroom strategies needed to speak systematically to this more holistic approach to good reading.

Teaching reading well, though, requires careful monitoring of students' progress. Good lesson design must meet students where they are. Treating good reading as good thinking creates a challenge with regard to assessment. Put simply, we must be able to expose the way students think about what they are reading to assess it.

The new departure in state assessment described in this booklet provides just the right model for the classroom teacher. Ordinary multiple-choice testing, although providing us with some information about student progress, is not the best instrument to reveal how students are thinking. We can never find out directly why students make the choices they do in answering multiple-choice items. Yet this is exactly what we want to know. By contrast, open-ended items in which students are challenged by appropriate questions to perform the kind of thinking we are trying to teach them – the focus of this booklet – give us exactly what we want. The perceptive analysis of student thinking included in the pages of this booklet shows us how much we can learn from such tests. This information is invaluable for any classroom teacher.

Introduction

In the spring of 1988, the Massachusetts Department of Education administered its second biennial assessment. It tested all eligible fourth, eighth, and twelfth grade students in four content areas – reading, mathematics, science, and social studies. Although the large majority of the over 3000 items were given in multiple-choice format, some of the items were open-ended, requiring students to answer in written form. These open-ended questions appeared in one form of the tests at each grade level. Consequently, one-twelfth of the fourth grade students, one-sixteenth of the eighth grade students, and one-twentieth of the twelfth grade students received a test form that contained some open-ended questions. However, they did not all receive the same questions. The ten or so questions in each subject area were distributed in such a way that, while we were able to receive a sufficiently large number of responses to each question to report reliably, we were not able to cover the many types of thinking that each subject required.

Members of our Advisory Committees, composed of teachers throughout the state, reviewed and categorized all the answers obtained. Their comments and instructional suggestions are reflected in this report.

There are three reasons for our decision to include open-ended questions in our assessment of student performance. The first is the value of the information obtained. While multiple-choice items are efficient, easy to score, and objective, they are a weak measure of how students actually think. Nor can they measure students' ability to generate solutions or students' approach to those ill-structured problems that are most familiar in everyday life. Including these types of questions on the assessment results in a more valid estimation of student achievement than we would have obtained had we limited assessment to multiple-choice items.

Our second purpose in including these open-ended questions was our belief in their intrinsic value: they reflect the kind of thinking that education is all about. Too often educators pay lip service to the need for active learning but teach and test students in ways that demand passivity. By their actions, schools say to students, "We are not interested in *your* response; we are only interested in the *correct* response." This report of the open-ended testing

shows how students respond when they are given the opportunity to answer to a semi-structured situation.

Finally, we hope that such testing will act as a model for classroom testing. We have given the questions themselves, as well as the state-wide results, in order for teachers to try them out in their own classes and, if they desire, to compare the results they obtain with the state norm. We wish to show that this type of testing yields important information about students' understanding of concepts and procedures, their ability to apply their learning to new situations, and their need for further instruction.

Although, the results in each subject area are treated separately, the underlying thought processes which we report on are similar. They reflect an approach to thinking that stresses engagement and critical evaluation. Beyond this, however, we look at how students function in various learning contexts which require the understanding of specific concepts.

Of the four subjects that are considered in this series, reading is the most general and most fundamental. In a certain sense, it forms the gateway to the other subjects. Indeed, some have contended that the same criteria that distinguish good reading from poor reading distinguish good critical thinking from poor thinking. It has been argued that the skills in reading involve much more than a passive attempt to "understand the text." Rather, the comprehension of a written passage requires much the same skills that are called upon to analyze and evaluate any kind of discourse, whatever the form or subject matter.

Reading and Thinking: A New Framework for Comprehension (Massachusetts Educational Assessment Program, May 1987) called attention to these interactive and dynamic theories of reading. Independently of what a text says directly, according to these theories, readers bring their own prior knowledge and reading purposes to bear. After reading several science fiction stories, for example, they start a new one with different expectations, and presumably better knowledge of the form, than if they had never encountered science fiction. Different purposes such as schoolwork vs. entertainment and different techniques such as scanning vs. close reading dictate different "styles" of reading almost as distinct as styles of writing. Moreover, while they must comprehend the information actually set forth in a text – "the words in front of them" – readers frequently extend the meaning by drawing inferences of

their own, on the text and on the subject. In that sense interactive theorists say that reader and text (or reader and author) contribute to a mutual construction of meaning.

Responses to the open-ended questions confirm the instructional recommendations contained in *Reading and Thinking*. Those recommendations can be summarized as follows:

- Give students the confidence to form and apply different reading strategies according to the characteristics of the material, their experience with similar material, and their purpose for reading. Encourage them to activate prior knowledge and to keep several strategies "in stock." To students used to reading everything along one dimension, this will be a revelation. Be sure they learn that flexibility is part of the method, the capacity to adjust or even change strategies with the twists and turns of a text.
- Since the aim is to broaden skills beyond what is required for "doing a school lesson," use materials that they would be likely to encounter outside reading class. At the same time, coach them in applying a variety of perspectives to even a single familiar text.
- Stress inference as essential to comprehension. Skill in this area means recognizing clues provided by the author, as when a storyteller puts a joke in the mouth of a character to show, not tell, that the character is witty. For active readers, skill also encompasses drawing inferences of their own. To explore the possibility of bias in a text, for example, they need not depend on a teacher to raise the issue or an author to admit to bias.

Characterizing interactive theory in broad strokes is one thing. Translating it into daily lessons is another. Perhaps the flavor can be conveyed by contrasting two ways of setting up a simple assignment. Suppose a poem is handed out and students are asked to answer a short series of multiple-choice questions emphasizing recognition of metaphor. In effect, the teacher has told the students what to read for, though not why. By contrast, an open-ended question about the poet's view of the world might nudge them to discover metaphor for themselves and in fact ask the teacher to tell them more about it. Open-ended questions may also uncover gaps of which the teacher would otherwise be unaware: for instance, that several students are too inexperienced with typographical conventions to distinguish a title unless it is printed in huge letters or that they have never thought about the function of a title in a text. They misread it as the first line of the poem. In many cases

interactive questions can be framed to elicit more than one "right" answer. If several plausible interpretations emerge in class, the stage may be set for a research assignment.

We have found that open-ended questions are highly useful for assessing comprehension. Furthermore, we believe that regular inclusion of open-ended questions in the reading curriculum helps to improve comprehension. Since appropriate questioning is a major educational concern, the remainder of this booklet is devoted to actual open-ended questions that have been tried on students. By analyzing response patterns we hope to show how a critical thinking approach to reading comprehension works out in practice.

Each of the questions described in this booklet taps one or more of the competencies listed in the Reading Assessment Framework in the Appendix. We suggest that you use them as models for measuring the specific skills that your own students bring to the reading process.

A Question of Answers

Scientists

> Your teacher tells your class, "Now you are going to read about *scientists*." Make a list of eight (8) things you already know about *scientists*.

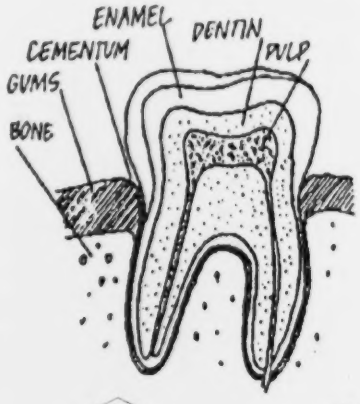
This question suggests a possible strategy for teachers to use in activating prior knowledge before beginning a reading assignment. With the acknowledgment of the role of prior knowledge in reading comprehension comes the realization that children often lack important concepts that are helpful, or even essential, to understanding. Even those with broader experience are often apt to think in stereotypical ways. Non-judgmental "brainstorming" fosters creative thinking, as the most common associations are made and children reach out for more creative responses. By initially requiring written responses, the teacher gives quieter or more reflective children a chance to contribute without fear of being dominated by their more articulate classmates.

Once this task has been accomplished, the teacher can use the results as a basis for class discussion, at the same time widening children's concepts. Clustering or categorizing responses is one method for accomplishing this. For example, after listing student contributions, the teacher might ask, "How many of these items are similar?" so that children can recognize similar ideas in different forms. "How many different clusters do you have in your list?" encourages broader thinking and discourages the tendency to give formula answers such as they study fossils, they study rocks, they study minerals.

Finally, this type of question is an example of a type of informal evaluation that teachers might use to track their students' quality of thinking. Instructional activities that stress broadening concepts should result in less reliance on formula and increased fluency in ideas. By occasionally asking children to write down their ideas, teachers can check the effectiveness of their instruction.

Pictured below is the top of a page from a science book. Use this information to answer questions 1 and 2.

TEETH: NIPPERS, CHOMPERS, AND GRINDERS



1. Judging from the *title*, what would a person learn from reading this article?

2. Judging from the *diagram*, what else would a person learn about teeth?

Teeth

The simple "toothy" exercise on the facing page, administered to children in Grade 4, called upon students to explore the relationship between form and meaning. As a more structured exercise might have done, it encouraged attention to mechanics: the function of a title and reading graphics. Approximately three-fourths of the respondents gave adequate answers. "Types of teeth" was a common reply to question 1; "different parts of a tooth" on question 2.

The open format, however, also uncovered a tendency among a significant number of children which might otherwise have gone unnoticed. About 25 percent of the respondents failed to activate their prior knowledge *critically*. In other words, they answered questions they had expected, perhaps from previous reading, rather than responding to the reading matter actually before them.

Examples:

How to floss your teeth without making you bleed.

That if you don't brush it you teeth will look bad and feel bad.

How to be a dentist.

When I Read

I'm a runner, a racer,
I've got a lot of speed.
I can sprint from here to there
with time to spare.
But when I read
then I'm a diver!
I plunge
right
in
and until the story's over
I don't come up for air.
Then too I'm an explorer,
a tracker and a rover
and I always
find something
I didn't know was there.

Lillian Morrison

1. In the poem above, the poet uses language playfully. What are two examples of this, and what does the poet accomplish in each case?

2. Based on what the poem says, describe several things the poet might do when reading a novel. Please support your ideas with evidence from the poem.

When I Read

Assessment of the response of Grade 8 students to Lillian Morrison's poem "When I Read" – reproduced here – offers some interesting contrasts between multiple-choice exercises and open-ended exercises.

The first question was used to measure the role of structure in conveying meaning. At this level students may not be accustomed to considering how the parts of a poem contribute to over-all meaning. Approximately half the respondents were able to recognize playful language and explain its function. Thus they noticed the space deliberately left between words in line 4, as well as the "downward" typography of lines 8-10.

This was roughly comparable to success achieved in a parallel multiple-choice question:

> The space between the words "to" and "there" in line 4 of the poem "When I Read" is used to suggest how
>
> 57% a. far the runner ran
> 7% b. tired the runner is
> 4% c. lonely the runner is
> 31% d. fast the runner is

However, the two modes of questioning call upon different thought processes. In one case the student is directed to a poetic device and is given a fixed choice of interpretations. In the other case the student is asked to perform in the manner of an active reader: finding the device and analyzing its intent on his or her own.

Among the children who were unable to answer the open-ended question satisfactorily, 20 percent ignored its requirements and proceeded to summarize the poem as a whole. Since interpretation plays a large role in classroom discussion of poetry, children may have answered a question they were used to rather than the question presented.

The second question requires interpretation but, unlike many of this type, it does not ask students to define meaning. Rather, it measures students' ability to draw inferences about a speaker's character from a text.

About a third of the respondents provided satisfactory answers. Among comments representative of this group:

> She probably doesn't stop until the story is over. This is why she says she is a diver and doesn't come up for air. She also searches for a meaning or moral of the story she is reading. That is why she says she is a tracker and rover.

Twenty percent were able to discuss some parts of the poem adequately, while ignoring or misinterpreting the other parts. For example, some students merged the title with the first sentence of the poem, thereby misinterpreting the meaning of the first part.

> She reads fast because in the first two sentences she talks about being a runner and a racer and lots of speed.

However, the question also provoked awkward attempts at literal interpretation by 20 percent of the respondents. "The poet might like to run a lot and relax in a swimming pool or something while reading a novel" was one of the more surreal ventures in this direction. Over a quarter either gave an irrelevant response (such as quoting from the poem with no explanation) or left the space blank.

Whether a more structured format helps students to do an abstract task better or simply does part of the work for them remains unclear. A multiple-choice item produced the following results:

> The speaker in the poem "When I Read" likes reading because it
>
> 20% is fast like running
> 12% is a solitary activity
> 62% leads to interesting discoveries
> 6% isn't competitive like running

"The Cave" and "The Dreamer" both describe boys who have special places they think of as their own. Read the poems to discover how the boys and their special places are similar.

The Cave

Sometimes when the boy was troubled he would go
To a little cave of stone above the brook
And build a fire just big enough to glow
Upon the ledge outside, then sit and look.
Below him was the winding silver trail
Of water from the upland pasture springs,
And meadows where he heard the calling quail;
Before him was the sky, and passing wings.

The tang of willow twigs he lighted there,
Fragrance of meadows breathing slow and deep,
The cave's own musky coolness on the air,
The scent of sunlight . . . all were his to keep.
We had such places—cave or tree or hill . . .
And we are lucky if we keep them still.

Glenn W. Dresbach

From Collected Poems by Glenn W. Dresbach,
The Caxton Printers, Ltd. Caldwell, Idaho.

The Dream[illegible]

He spent his childhood hours in a den
of rushes, watching the gray rain braille
the surface of the river. Concealed
from the outside world, nestled within,
he was safe from parents, God, and eyes
that looked upon him accusingly,
as though to say: Even at your age,
you could do better. His camouflage
was scant, but it served, and at evening,
when fireflies burned holes into heaven,
he took the path homeward in the dark,
a small Noah, leaving his safe Ark.

William Childress

Copyright 1966 by William Childress

1. Both boys go to their special places when they are troubled. Which boy seems to be more unhappy? Please explain the reasons for your choice.

2. Which poem helped you to imagine the boy's special place better? Explain how the poet helped you to imagine. Include one example of the poet's effort to help you imagine.

The Cave / The Dreamer

Two poems about troubled youth were set side by side in the next exercise. In contrast to the metaphoric style in the previous example, these poems relied more upon description. Grade 8 students did very well with two open-ended questions. Over 80 percent were able to use supporting evidence from the poems to answer appropriately. This may reflect familiarity both with the type of poems and the requirements of the tasks. Apparently, by eighth grade students are comfortable with recognizing, understanding, and using description in interpretation.

As to which boy seemed more unhappy, "I think *The Dreamer* is more troubled" was a characteristic answer, "because he thinks nobody thinks he's good enough. He also just sits there, unlike *The Cave* where the boy admires the beauty and builds a fire."

When asked to imagine each boy's special place, the majority preferred the cave. "This author," wrote one student, "used many more adjectives to describe this special place. The poet's description also appealed not only to our sight, but our hearing, smell, and feeling...."

Interestingly, a high number of students in the group that favored the other boy's special place were able to make a reasonable argument for their preference. "*The Dreamer* was easier to imagine," said one of these. "'Watching the gray rain braille / the surface of the river.' It gives you a dark, gray, sorrowful feeling."

Students produced less well when presented with the following multiple-choice question:

William Childress titles his poem "The Dreamer" because:

35%	the boy's special place only exists in his dreams
6%	when the boy is in the rushes he dreams he is on a raft
52%	the boy's dreams are in conflict with what others expect of him
6%	the boy prefers the night when sleep and dreams occur

Here, students must be aware of the purpose of the title, to further enhance the author's meaning. The title, "The Dreamer," establishes the character of the boy in the poem; it does not refer to the content of the poem. From their responses to this question and to "When I Read," it appears that students have difficulty recognizing the function of titles in poetry.

These poems are taken from Class Dismissed, *a collection of poems about high school students. Written by a high school teacher, these poems were inspired by the students in his classes. Read to see if you are reminded of any of your classmates or maybe even yourself! After reading, please answer the questions that follow.*

Dana Moran

I was in such a hurry to get out of school
that I took a shortcut.
I dropped out.
Now I work full-time at the local K Mart
Putting out stock, handling the register,
Dealing with the crazy customers
Who hassle me about returns,
Who cut the line,
Who think I cheat them by ringing up
the wrong prices.
Taking stock of what I've done
I see that the shelves of my life are
kinda empty,
Bare, in fact.
When will it register that
There are no express lines to happiness?
I am such a fool.
Check it out.

From CLASS DISMISSED II by Mel Glenn.
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Amanda Butler

Most mothers yell, scream or hyperventilate.
They cajole, wheedle or plead.
They bribe, coerce or threaten.
Not my mother.
She has replaced the telephone
With the refrigerator,
Leaving short, cryptic notes on the door.
Held in place by those silly little magnets
Which look like overripe fruits
A few well-chosen words determine my daily fate.
"Be home at four—sharp!"
"Clean up your room—today!"
"Start dinner—I'll be late."
"You're grounded—for two weeks."
"Don't you know what a curfew means?"
"I just got the phone bill—are you crazy?"
Smart lady, my mother.
There is never a chance to answer back.
"Leave a note," she says
As she flies out the door to work.
It's not the same thing.
Refrigerator conversations leave me cold.

1. Which line of the poem "Dana Moran" best expressed the theme of the poem? Please explain your choice.

2. In the poem "Amanda Butler," why doesn't Amanda "Leave a note," as her mother suggests?

3. Explain how the poet uses a similar technique in the last lines of both these poems.

Dana Moran / Amanda Butler

Paired poems figure in the next exercise also, this time for Grade 12 students. Poetry remained a "success" area among respondents at this level. Over 80 percent were able to choose a line expressing the theme of "Dana Moran" and justify their choice. Only 6 percent skipped the question or gave irrelevant answers. "There are no express lines to happiness" was the choice of 42 percent, leaning toward the impersonal. Over a quarter selected the more concrete "The shelves of my life are kind of empty" to embody the same theme.

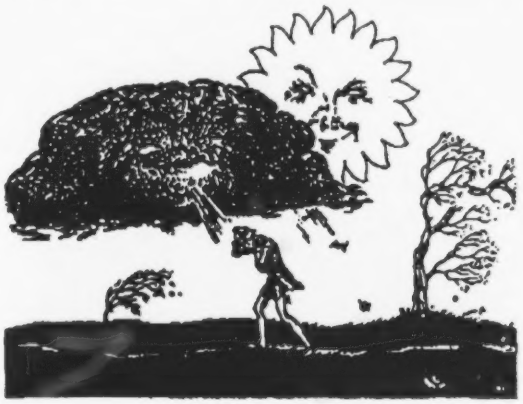
Regarding the question about leaving notes, approximately three-quarters inferred Amanda's attitude with no hesitation. "Amanda doesn't feel that writing a note means anything," noted one student. "The intimacy of conversation is missing from their relationship," another stated. A tendency to take sides was apparent, however. Student comments about the character of the mother could have come from Amanda herself. "Her mother probably couldn't be bothered to listen to her anyway" was one example. Another student asserted that "Parents never seem to have time to talk to us kids about what's going on."

The final question asked students to assume an external perspective by analyzing the use of a pun in the last line of each poem. Almost a quarter used the correct term. "The poet uses puns: speaking about a cashier he uses 'Check it out,' and when speaking about 'refrigerator conversations' says 'leave me cold.'" A small percentage described the function of the last line accurately but labeled it "irony," "play on words," or some other such term. Another third were able to discuss the last lines cogently without naming the literary device in question. "The first poem states 'check it out,' meaning to look into it," wrote a typical student in this category, "not 'check it out' like what you do at a store."

All in all, two-thirds of the respondents handled this exercise competently, relating elements to total text.

The Wind and the Sun

Read this story to find out how a very interesting bet was won. Then answer the question that follows.



The North-wind and the Sun once had an argument as to which had the more power. They were squabbling back and forth with words, words, words when an unlucky man happened to walk along on the road beneath them.

"All right," said the North-wind, "here's a chance to prove who's right. I'll bet you I can take that man's coat off more quickly than you can."

"That's a bet," said the Sun, "you try first."

The North-wind blew an icy puff at the man and nearly froze him, so he clutched his coat closer around him. Then the North-wind got angry and puffed, blew and blasted away so hard he even brought icy showers down on the miserable man, whose teeth rattled with the cold.

Naturally the poor fellow hugged his thin little coat all the tighter and the North-wind had to give up.

"Now, it's my turn," said the Sun. "I'll do it the easy way."

He came out from behind a cloud and started to shine with all the heat he could.

After a short while the man was so warm he had to take off his coat and go sit in the shade of some trees. So the Sun won the bet.

1. Write your own moral (or lesson) for this fable.

Wind and Sun

With a short illustrated fable called "The Wind and the Sun" we return to a Grade 4 exercise. The task set for students was to formulate a generalization from the text.

When a general proposition was stated for them, in the form of a multiple-choice item applied to the same text, a majority of respondents were able to respond correctly.

What would be the BEST "moral" for this story?

68%	It is better to use your brains than your strength.
6%	There's always somebody whose troubles are worse than your own.
17%	Sometimes even the cleverest people are caught in their own traps.
10%	A wise man learns from the experience of others.

When the task was presented in the unstructured format of the open-ended question shown here, 42 percent of the children were able to respond with some universal truth. Approximately a third (31 percent) suggested that the moral to be drawn was not to challenge, while 7 percent suggested a moral more or less along the lines of persuasion being better than force, and only 4 percent clearly articulated the preferred option (brain over brawn) in the multiple choice. Students appeared to perceive the story in terms of their own life experiences.

On the other hand, some students may have been unfamiliar with the term "moral" in the sense intended here and confused it with what they understood by "morality," which in turn seemed to shade into what could be termed "prudence." Such remarks as "Don't make a bet unless you know you're going to win" and "Don't brag about something you're not sure you can do" illustrate this point.

The majority who were unable to answer the question satisfactorily went astray for a variety of reasons. In some cases elementary problems of reading comprehension rather than inability to conceive the task got in the way. Morals were drawn – such as "It doesn't matter who's right or wrong, it's how you play the game" and "What it is trying to teach you is that the sun is stronger than anything else" – but they did not reflect the meaning of the text.

Nevertheless, abstraction itself was a problem for a significant fraction of the respondents. Seizing on details of the fable, they offered what might be called over-generalized facts: "You can't make someone take off his coat if he's cold." Literal-minded students looked to the text for a direct answer rather than inferring from the text. They reiterated or explained what they saw on the surface: "When people get hot, they take off extra clothing to try and get cooler."

An interesting sidelight is that a number of fourth graders referred to the wind as a cloud. Arguably the illustration that accompanies the fable is ambiguous in that respect, but the possibility remains that any illustration may obfuscate rather than clarify matters for weak readers who depend on pictures to "tell" them the story. This may be particularly true in the television age, when pictorial figures and movements are presumed – indeed designed – to dominate over words.

Many of the young women who worked in the Lowell textile mills used the power of the press to call attention to unsatisfactory working conditions. Below is the first half of a factory girl's letter to the editor of the Daily Evening Voice. *Read it and answer the question that follows.*

Letter from a Factory Girl

To the Editor of the Daily Evening Voice:

Lowell, July 2, 1866

A victory on the side of Labor has occurred here, which I fear has not come under the notice of "Observer."

I will try and give you the account, hoping you will publish it for the encouragement of others who labor under the supervision of soulless men. It happened in the "dressing room" of the Merrimack Corporation. [The "dressing room" is where yarn is treated with a starch paste called "size."]

All who are acquainted with the mills know that the dressing room is at the best an uncomfortable place to work. In the room mentioned there are fans communicating with the air outside, and when running they add much to the comfort of the dressers [the women treating the yarn with size]. But it required a little more water to run the fans, so the agent determined they should be stopped. Not satisfied with this, he also ordered that the girls should lift or "put up" their own size. This would enable him to discharge from two to four men.

But the girls, determined not to submit, called a meeting and voted unanimously not to start their frames till the size was put up for them and the fans set in motion.

1. Imagine yourself as the factory girl and complete the letter explaining how the crisis in the dressing room of the Merrimack Corporation was resolved. Please base your "ending" on evidence from the unfinished letter.

   Your ending:

Letter from a Factory Girl

A portion of a letter from a 19th-century textile worker served as the basis for a challenging Grade 8 exercise. To deal well with the question posed here, students had to handle complicated tasks simultaneously. (1) They had to infer the author's viewpoint, stepping back a bit from the text to infer also her strategy for communicating with her readers of that time. (2) In order to complete the letter, their writing had to be stylistically consistent with hers and true to the epistolary genre. (3) To make sense of the events related, they had to recognize that the letter states that the factory girls won a victory.

Although two-thirds of the students completed the letter in a stylistically consistent manner, only half recognized that the girls had won a victory. The most successful respondents used sophisticated techniques such as echoing phrases from the opening of the letter. The following is a good example.

> A representative from that meeting was sent to the agent to demand their comforts, or the girls would not start their frames. Since this would hurt the factory, the agent submitted. Soon the size was put up and the fans set in motion, showing a victory for the factory girls.

More commonly, students grasped some events but not the language and character of the author or of the time. The following example falls into that class.

> ...They had finally accomplished the Impossible Dream. The next day the boss said, "I am very proud of you, my girls, and you all deserve a raise of two cents." The girls were very happy, two cents could buy a lot more than what they had ever imagined. All because of the impossible dream.

Definitions were included with the text of the letter. Some students, however, presuming they knew what "size," "frame," and "dressing room" meant, ignored both the definitions and the context that necessitated them. "We now have the fans set in motion and they are putting up the size so we have made the frames" was a typical vocabulary error. In view of such results, teachers might stress context clues and elasticity of language as part of vocabulary training.

Approximately 10 percent of the respondents short-circuited the assignment by offering opinions and strategies outside the letter format. Instead of completing a letter and without trying to speak through the factory girl, they simply gave advice on the situation in their own voices. For example: "The Merrimack Corporation in the dressing room should get extra help, and then everyone would be satisfied." It is interesting to note that in a converse assignment – the Lake Champlain exercise – the same proportion of students err in the opposite direction. When asked to discuss in their own words what a newspaper article might contain, a tenth of the respondents attempted to write the rest of the article.

Read the following story to learn how Antoine Parmentier convinced the French people that potatoes were fit to eat, and then answer question 1.

Potatoes

According to an old story, there lived in France long ago a scientist named Antoine Parmentier. For many years he had tried to get the French farmers to plant potatoes. But in those days few people had even eaten potatoes. "Food that grows under the ground would only be fit for pigs," they said.

Then there came a time in France when the wheat crops failed and many people were hungry. Once again Parmentier suggested his idea for growing potatoes. But people still laughed and made fun of him. Instead of becoming discouraged, the scientist went to visit the king. He explained to the king how potatoes were grown and eaten in many other countries. He then told the king of a plan he had, and the king agreed to help him carry it out.

Some potatoes were secretly planted in a field near Paris. Day and night the field was guarded by soldiers. People called it the "treasure garden." When the potatoes were ripe, the guards were taken away. That very night the Parisians sneaked into the field and dug up the potatoes. Then the "thieves" hurried home to cook and eat the strange vegetable. Lo and behold, everyone liked them!

The news traveled from one end of France to the other. Before many years had passed, potatoes could be found in almost every French home. Antoine Parmentier had won at last.

1. Explain how Antoine Parmentier's plan reveals his understanding of human nature.

Potatoes

An exercise titled "Potatoes" was administered to Grade 8 students and Grade 12 students in both open-ended form and multiple-choice form. Intriguing results emerged.

In advance "Potatoes" promised to be a relatively difficult assignment, especially for Grade 8. Students were challenged to comprehend a main theme and to articulate a generalization, and coming to grips with the abstraction "human nature" was essential to the task. When choosing among multiple-choice alternatives, younger respondents did indeed run into trouble, as the following percentages indicate:

19%	People want what they cannot have.
2%	The people of Paris were thieves.
52%	Potatoes are fine for people to eat.
27%	Antoine Parmentier was very clever.

The performance of older students as a group, although better, was likewise shaky when they chose among statements of theme:

38%	People want what they cannot have.
3%	The people of Paris were thieves.
30%	Potatoes are fine for people to eat.
30%	Antoine Parmentier was very clever.

Surprisingly, when it came to approaching the task through the open-ended question, half the Grade 8 respondents did well. "People covet what others value or guard" and "People don't want to try new things" were typical responses. In the open-ended format, nearly three-quarters of the Grade 12 respondents handled human nature with aplomb. Concise, sophisticated answers were common. The phrase "forbidden fruit" turned up several times. Some students who perhaps fell short of the appropriate level of generality compensated with eloquence. The following is an example:

> He saw that even in times of need people would not concede to what they considered to be animal-like behavior in order to survive. He understood that people have a need to feel important and that they try to preserve their dignity. By planting the potatoes in a small field guarded by the King's soldiers he created an aura of

> "royal" importance about them. Even in times of famine people would much rather eat exotic foods swiped from the King's "treasure garden" than food grown in dirt that is fit only for pigs.

The results took still another unexpected turn. On the whole, those respondents who did not do exceptionally well did exceptionally poorly. The middle group disappeared.

From the "other half" of the Grade 8 group came a high number of inappropriate or irrelevant answers, evidently stemming from a misinterpretation of the expression "human nature." Not recognizing it as a unit, a number of students construed it to mean: "human = Parmentier," "nature = potatoes." This produced statements on the order of: "That the potatoes were grown under the ground, that's human nature – from all the roots and everything" and "It reveals his understanding of human nature because he understands that because something is grown underground doesn't mean it's pig food." The king's role was frequently over-estimated, as in "He knew that people wouldn't believe him, so he asked the king for help, and of course people had respect for the king so they tried them." A few students were beguiled by the expression "fit for pigs" and depended on it for explanatory power, as in the following comment:

> Antoine's plan reveals human nature in a way that is saying you never know until you try and that pigs are people too. Doesn't matter what it is as long as you like it.

A disappointing 20 percent of the Grade 8 respondents looked for the answer within the text. They "explained" the story by reiterating it, along the lines of "He had planted them in a field near Paris and had soldiers watch them." Nearly as many Grade 12 respondents (17 percent) reiterated the story too, but fewer resorted to other kinds of irrelevant or inappropriate answers.

When compared to the multiple-choice item, the open-ended question appeared to be the more difficult. It calls for not only an understanding of the main theme, but an articulated generalization. However, the results indicate that students performed more successfully in the less structured task than they did when presented with a set of pre-selected alternatives.

The open-ended question, focussing as it did on "human nature," appeared to indicate the need for abstraction. When asked only to "explain a theme," students reverted back to seeking the answer within the text. Convincing people that potatoes are fine for people to eat was Parmentier's stated

purpose in the story; it not the *purpose* of the story. Students were asked to use inferences to draw conclusions (evaluating and extending meaning). Instead, they answered on the level of textual analysis. From the open-ended question, we have evidence that students are capable of abstraction. What may be needed is direction in recognizing when abstraction is required.

The Lake Champlain Monster

A newspaper article is entitled "Lake Champlain's Monster — Fact or Fiction?" The first two sentences of the article are:

> "Believers say the warm waters of summer bring the monster to the surface. Others say that the monster is just the creation of jokesters."

Describe the kind of information you expect the rest of the article to contain.

The open-ended exercise called "The Lake Champlain Monster" asks students to associate genre with its typical characteristics. At fourth grade, the question does not ask children to predict what happens next. However, this is how most children interpreted it. Almost half completed the article with their own story, while one-quarter were able to suggest that two sides would be presented. Typical of each category are:

> Some say the monster is friendly and others don't. They also say it is 233 years old. It has yellow eyes and a green body with pokes on its back. It comes out every three hours. Some people don't believe in it but just in case it is real, they're staying away from the water.

> The article might describe the monster. The article might name some people who have seen the monster. It may explain how the monster comes to the surface. The article may contain facts about why there might be a monster and why there might not be a monster.

A newspaper article is entitled "Lake Champlain's Monster — Fact or Fiction?" The first two sentences of the article are:

> "Believers say the warm waters of summer bring the demon to the surface. Skeptics suggest the dark dragon responds better to the ringing of cash registers."

Describe in detail the kind of information you expect the rest of the article to contain.

The other version of the question challenged Grade 8 students and Grade 12 students to make relatively large inferences from a fragment of text. Interpretation of figurative language, familiarity with newspaper feature writing as a genre, and expectations about presentation of evidence all had a bearing on the assignment.

A number of Grade 8 respondents seemed unable to think metaphorically, and they took the ringing of cash registers literally. "The creature was sensitive to the ringing," one student concluded. "We will be taking the bells out of cash registers for the summer and doing something to stop the water from being warm," another wrote. Other Grade 8 respondents recognized the figurative language but misjudged the writer's tone and constructed fanciful metaphors of their own. "It will probably also contain some facts on how each consumer probably has one of these dark dragons in them that likes to spend money" fell into this group. A related example: "I would expect information concerning the economy and possible economic problems in the Lake Champlain territory. The monster is a symbol of misfortune and a struggling flow of money."

A significant number of students (22 percent at Grade 8 and 15 percent at Grade 12) completed the article or completed a fiction piece and in so doing exposed a certain vagueness as to the components of an "article." Several students interpreted the title as a question for them to answer, circling "Fiction."

Although about half experienced difficulty with the details of the assignment, Grade 12 respondents had a better understanding in general of what was expected of them. The majority more or less recognized metaphor, genre, and the call for critical inference.

About a quarter of the Grade 12 respondents saw the text as an intriguing lead into a serious story in which opposing evidence would be cited. They answered the question in the following spirit:

> I expect the rest of the article to contain certain points of facts that disprove the existence of this dragon and other points that support the theory of the existence of the dragon. There will probably be people interviewed that believe and disbelieve in the dragon, and it may include a reason why people may believe this dragon lives.

> The rest of the article would contain eyewitness reports of sightings of the monster. The reports would give descriptions of the monster, the time of day the sighting occurred, the date, the weather, and any unusual movements the monster made. The article would also include scientific facts that the monster does not exist.

A different quarter of Grade 12 respondents recognized the genre and understood the assignment as well as the first quarter referred to above. Because of cynicism about journalism, however, they tended to view the presentation of "evidence" as just a formality in such articles. Typical comments from this group:

> The story probably doesn't contain anything about a real monster. They just put it that way.

> Choppy sentences full of nonsense facts conjured up by a struggling journalist trying to make a name for himself.

> I'd expect an explanation of the two positions: believers and skeptics. There would be some eyewitness accounts from believers and some really cynical remarks from the skeptics about how it's all a publicity stunt to get people to come and spend money at the lake. Judging from the title, the article would probably end with some sort of corny restatement of the first two sentences.

Mary McLeod Bethune

A book begins "Mary McLeod Bethune was born in Mayesville, South Carolina on July 10, 1875." Describe the kind of information you expect the book to contain.

A sentence about the birth date of Mary McLeod Bethune – the opening of a simply written biography – was presented to Grade 4 students to test their evaluation of type and structure.

Although most students have probably not been exposed to this kind of activity, 75 percent of the respondents did anticipate a biography from the single sentence. "It would be a biography," wrote one confident student, "a story to tell about a person's life."

Of the students who succeeded with this exercise, 10 percent showed an understanding of the rationale for writing biography. "It should contain information about her life and why she was famous. It should also have when she died and why," answered a respondent in this group. A few respondents took pains to mark biography off from the other genres, as in the following example:

> It would probably contain information about her life and some great things she did, but that's only if it was a biography. It could instead contain some sort of crazy adventure, experience, or just about anything if it was a fiction book.

Predictably, some students completed the "story" instead of standing back from the text. "Mary McLeod Bethune is a author," according to one of those students. "She was a happy woman. She had two kids and a wonderful husband."

A corresponding multiple-choice question that narrowed the respondents' task down to choosing among definitions produced commensurate over-all results.

A story about a person's life is called

17%	fiction
2%	a poem
79%	a biography
1%	a fairy tale

Three Views of the Lowell Mills

Questions 1-3: Read all three of the following viewpoints before answering the questions.

Factory owners claimed that their operatives (as factory workers were called) enjoyed ideal working and living conditions. Nevertheless, in 1836 many operatives formed unions and went out on strike. Their actions were unsuccessful. When the workers ended their strike, they found out union leaders had been fired. Soon after the strike of 1836, a visitor wrote about the factories of Lowell. Read the following passage to learn about some of the conditions that lead workers to form labor unions.

View 1: An American Journalist

The operatives work thirteen hours a day in the summer time, and from daylight to dark in the winter. At half past four in the morning the factory bell rings, and at five the girls must be in the mills. A clerk, placed as a watch, observes those who are a few minutes behind the time, and ... [steps] are taken to ... [encourage] punctuality....

As seven the girls are allowed thirty minutes for breakfast, and at noon thirty minutes more for dinner, except during the first quarter of the year, when the time is extended to forty-five minutes.... At seven o'clock in the evening the factory bell sounds the close of the day's work.

So ... exhausted and worn out ... are a number of girls that they go to bed soon after their evening meal....

Source: The Harbinger, Nov. 14, 1836, in Bailey and Kennedy (ads.), The American Spirit, Vol 1, pp. 278-280.

Now let us examine the nature of the labor itself, and the conditions under which it is performed. Enter with us into the large rooms, when the looms are at work.... [In one factory] the din and clatter of ... five hundred looms, under full operation, struck us on first entering as something frightful and infernal.... After a while we became somewhat *inured* [accustomed] to it, and by speaking quite close to the ear of an operative and quite loud, we could hold a conversation and make the inquires we wished.

The girls *attend upon* [take care of] an average of three looms; many attend four, but this requires a very active person, and the most *unremitting* [constant] care.

... The atmosphere of such a room cannot of course be pure; on the contrary, it is *charged* [filled] with cotton filaments and dust, which, we are told, are very *injurious* [harmful] to the lungs.

Not all visitors to the Lowell mills were critical of the working conditions. Read the following accounts by Davy Crockett and Captain Hall, an Englishman, for a different perspective, and then answer the questions that follow.

View 2: Davy Crockett

We stopped at a large stone house at the head of the falls of the Merrimack River, and having taken a little refreshment, went down among the factories. The dinner-bells were ringing and the folks pouring out of the houses like bees out of gum. I looked at them as they passed, all well-dressed, lively and genteel in their appearance, indeed the girls looked as if they were coming from a quilting frolic. . . . I went in among the young girls, and talked with many of them. Not one expressed herself as tired of her employment, or oppressed with work; all talked well, and looked healthy. Some of them were very handsome; and I could not help observing that they kept the prettiest inside, and put the homely ones on the outside rows.

from Crockett's Account of a Tour to the North and Down East, 1834.

View 3: Captain Hall

The whole discipline, ventilation, and other arrangements appeared to be excellent, of which the best proof was the healthy and cheerful look of the girls, all of whom, by the way, were trimmed out with much neatness and simplicity, and wore high tortoise-shell combs at the back of their heads. . . . On the 13th of October, at 6 o'clock in the morning, I was awakened by the bells which tolled the people to their work, and on looking from the window, saw the whole space between the factories and the village speckled over with girls, nicely dressed, and glittering with bright shawls and showy-colored gowns and gay bonnets, all streaming along to their business, with an air of lightness, and an elasticity of step, implying an obvious desire to get to their work.

from Captain Hall's Travels in North American in the Year 1827 and 1828.

Questions 1-3: Some of the differences in these three views of the conditions in the Lowell Mills may be explained by the different backgrounds of the three observers: View 1 by an American journalist, View 2 by an American frontiersman, and View 3 by an English military man. *Evaluate* to what extent each view may be *biased* by the observer's background. Please *explain* your *reasons* in each case.

1. View 1: An American Journalist

2. View 2: Davy Crockett

3. View 3: Captain Hall

Three Views of the Lowell Mills

In an exercise for Grade 12, three very different accounts of the Lowell mills by men who visited there were set side by side to test perception of bias or viewpoint. The pattern of response was unusually clear-cut.

By Grade 12 a majority of students appear able to apply life experience to reading and thinking, and some offer astute observations of people's roles and motives. Two-thirds of those who responded to this question readily found and accounted for bias in the texts. Among the impressive answers were the following:

View 1: An American Journalist

The journalist probably exaggerated the conditions of the Lowell mills, as a journalist would use hyperbole to make his story interesting. The use of hyperbole, though, does make one envision a group of girls who work incredibly hard at this job.

View 2: Davy Crockett

To the best of my knowledge, Davy Crockett was not an expert in the field of mill evaluation. He was an explorer and frontiersman. In my own opinion, I think Davy Crockett was traveling with no female companion. I think he was more concerned with the women themselves than with the conditions surrounding their work and the mill.

View 3: Captain Hall

The Captain is a military man and thus is used to people being slightly unhappy with their lot and also with them being pressured into a regimen of work and discipline. Thus maybe he doesn't feel that this is so terrible for civilians.

Unfortunately, the students who have not developed the ability to read critically are separated farther than ever from their classmates by Grade 12. Though their vocabulary has grown and their sentence structure has improved, they are captives of the Grade 4 impulse to look for an answer in the text.

Thus 15 percent of the respondents to the Lowell mill question did not discuss bias. They simply recapitulated the passages. "The journalist found many things to be harmful and dangerous" ran one answer. "Captain Hall describes the women as cheerful and healthy" went a similar response. That analysis might involve more than literal content has simply not sunk in.

Obviously the exercises that have been shown here are neither exhaustive nor perfect. The purpose of considering them in some detail is to invite teachers to think concretely about analytical and evaluative skills that need to be taught.

An active reader is above all a critical reader. He or she is capable of approaching the same text with different ends in mind and switching strategies smoothly when moving from one type of material to another. Even fairly young students who are still learning to "decode" the literal information contained in a text can begin to step back and assess the reasonableness of what is presented. Extensive practice in comparing and contrasting texts is desirable. In the upper grades, especially with texts that marshal evidence and assert conclusions, nothing less than reading judgment is the goal. Like a juror in the courtroom, a critical reader weighs the preponderance of evidence. Does it support an author's claim? When other authors put forth counter-claims, which makes the best case?

To teach critical reading skills is an ambitious goal, the more so because they must be joined to, not substituted for, the narrower skills traditionally associated with reading comprehension. (As students go out into the world, they will probably never think that income-tax forms, say, are altogether "reasonable," but they must be able to follow directions.) The potential rewards of teaching critical reading skills, however, are commensurate with the effort. It means involving students in forms of thinking that they will use again and again in their lives.

The purpose of this report is to draw attention to the particular merit of open-ended questions in constructing lessons. Appropriate questioning by the teacher is a path to appropriate questioning by students.

Summary and Conclusions

Clear trends emerge from the results that have both developmental and instructional implications.

Students performed reasonably well when asked to interpret poetry; however, they had great difficulty with its formal and figurative aspects. Only half of the fourth graders recognized the playful use of language in the poem **When I Read.** Some appeared to considered the title as the first line of the poem; many took the metaphor of racer in its most literal sense. While older students were more successful, especially when asked to interpret poetry, they also experienced difficulty in recognizing the relationship between its formal elements and meaning.

To step back from the text, to view it as a genre in itself – quite distinct from its meaning – is not a common procedure among students at any grade level. Many seem to be unaware of formal or stylistic devices that authors use to enhance meaning. Instead, like the subject of **When I Read**, they appear to "plunge right in."

This tendency was evident in non-fiction as well. In response to the question on **The Lake Champlain Monster,** a moderate proportion of students at both eighth and twelfth grade levels found difficulty with the figurative language involved, misinterpreting the metaphor used.

In addition to the difficulty they showed with figurative language and devices, students did not appear to recognize more generalized metaphors. For example, less than half of the younger children were able to give a reasonable moral in response to the fable **The Wind and the Sun.** Many read the text literally, failing to understand the fantasy involved – surprising in view of the role of fantasy in children's literature.

Although the ability to abstract may be, in large part, developmental, difficulties persisted throughout the grades. When asked to generalize the theme of **Potatoes,** for example, only half the eighth grade students and three-quarters

of the twelfth graders gave a correct response. A sizeable proportion at both grade levels answered literally, merely reiterating the passage. Again, they did not recognize the need to infer from the text rather than try to find the answer in it.

Older students were most successful when they were asked to infer character. Eighth grade students clearly identified with the boys in **The Cave** and **The Dreamer**, while twelfth graders did likewise with **Dana Moran** and **Amanda Butler.**

However, their understanding was not confined to their contemporaries. Although half did not read the question carefully enough to give a completely satisfactory response, two-thirds of the eighth grade students were able to identify enough with the character in **Letter from a Factory Girl** to write a letter in an acceptable style and manner. Responses to a parallel question at the twelfth grade, **Three Views of the Lowell Mills,** showed an impressive variety of valid answers. Many students appear to have a clear picture of people's roles and are able to apply life experience to reading and thinking.

The underlying theme of the questions presented here is their demand for an active engagement with the text: the use of structural cues, the application of prior knowledge, and the continual interplay of conjecture and confirmation to get at the central meaning. Although some of the abilities measured, such as abstraction, may be developmental in nature, many are developed as a result of exposure. That students perform so well when asked to interpret the thoughts and actions of characters argues that interest and familiarity play a large role in their performance. Conversely, their difficulties with the more external aspects of reading – recognizing metaphors, identifying the effect of the structural aspects of text, generally looking at the text qua text – suggests a lack of familiarity with this way of reading.

Confirmation of this comes from a committee member who made the following comment on the results of the open-ended assessment:

> I feel that the results of the open-ended questions indicate that the skills tested have not been presented in this manner and style to students. For example, completing a letter or predicting what information will be included in subsequent paragraphs is "foreign" to most students at all levels tested.
>
> Linda McMenimen
> Teacher
> Greater Lowell Voc Tech

Another member had specific suggestions for instruction. Among them were:

> The use of non-fiction materials – teaching through the use of real informational articles and texts, science, social studies and real life forms and print media.
>
> Teaching of study strategies – plans and tools for learning, prior knowledge, purpose, self-questioning, student active processes.
>
> Writing – comprehension skills such as summarizing, note-taking, outlining, etc. which forces students to examine and organize their written thoughts and put the author's ideas into their own language.
>
> Higher level thinking skills – using more difficult materials, inferences, analyzing, comparing, evaluating various writers and schools of thought, but through teacher modeling, not as independent practice.

Edward Sacco
Director of Reading
Reading Public Schools

Another member made the following comment about the open-ended question format:

> The use of the open-ended question format in the assessment testing is a positive step forward toward our goal of graduating competent young adults who can problem solve and who possess strong communication skills. As an elementary principal, I feel the use of open-ended questions in conjunction with other good testing techniques should begin at the primary level and develop and grow in subsequent grades.

Joan Sheehan
Principal
West Springfield

Notes

Appendix

The open-ended questions discussed in this booklet are classified on the next page according to the Massachusetts Framework for Reading Comprehension. This framework is used by the assessment program to help teachers diagnose students' strengths and weaknesses in reading comprehension. EXTERNAL refers to the formal aspects of a text, in contrast to its meaning. Skills classified under External Analysis and Evaluation include recognizing the literary conventions associated with different types of reading material and being able to adjust reading accordingly. INTERNAL refers to those skills that readers use to extract and extend their understanding of the content. They are similar to the traditional skills associated with reading comprehension. A complete discussion of the framework is contained in *Reading and Thinking: A New Framework for Comprehension*.

Following the framework are the results which form the basis for discussion in this booklet. They are presented for the convenience of teachers who wish to compare their students' performance with those of students statewide.

	Analysis	Evaluation
EXTERNAL	**Types of information:** Grade 4: Teeth **Relationship of elements:** Grade 4: Mary McLeod Bethune **Author's purpose, point of view, tone:** Grade 8: Letter from a Factory Girl	**Use of evidence to draw inferences:** Grade 4: Teeth Grade 4/8/12: The Lake Champlain Monster
INTERNAL	**Relationship of elements** Grade 8: The Cave/The Dreamer. Question 2 Grade 12: Dana Moran/Amanda Butler. Question 3 **Main Ideas/Issues** Grade 4: The Wind and the Sun Grade 8/12: Potatoes Grade 12: Dana Moran/Amanda Butler. Question 1	**Reliability of sources:** Grade 12: Three Views of the Lowell Mills **Use of evidence to draw inferences:** Grade 8: When I Read. Question 2 Grade 8: The Cave/The Dreamer. Question 1 Grade 12: Three Views of the Lowell Mills Grade 12: Amanda Butler/Dana Moran. Question 2

The Wind and The Sun

Reporting Category: Internal Analysis
Grade Level: Four

Response Summary:	Frequency (%)
a. Appropriate generalization:	42
b. Inappropriate generalization	20
c. Answers specifically to details	14
d. Reiterates story	13
e. Other inappropriate/ blank	11

Examples:

a. Don't make a bet unless you know you're going to win.
It's better to have a brain than to be strong.
Kindness is better than force.

b. If you're warm and friendly, people will open up to you.

c. You can't make someone take off his coat if he's cold.

d. The sun won because he tried to warm the man with all his heart and the wind tried to freeze him.

The Lake Champlain Monster

Reporting Category: External Evaluation
Grade Level: Four

Response Summary:	Frequency (%)
a. Detailed evidence on both sides	6
b. Vague evidence that two sides will be presented	17
c. Evidence of one side presented	25
d. Completion of article	43
e. Irrelevant	5
f. Blank	5

Examples:

a. The article might describe the monster. The article might name some people who have seen the monster. It may explain how the monster comes to the surface. The article may contain facts about why there might be a monster and why there might not be a monster.

b. The writer probably tells about both sides of the story. First he might say what the people who believe say and then what the people who don't believe say.

c. What color is he. How big is he. What does he eat. What he looks like.

d. Some say the monster is friendly and others don't. They also say it is 233 years old. It has yellow eyes and a green body with pokes on its back. It comes out every three hours. Some people don't believe in it but just in case it is real, they're staying away from the water.

e. The Lake Champlain monster is a enormous beast about 20 feet tall and 3 feet wide. It is very ugly and gross.

Comments: The first three types of responses are considered satisfactory to varying degrees because they describe the information the article might contain. The student answers in terms of genre rather than content.

The Lake Champlain Monster

Reporting Category: External Evaluation
Grade Level: Eight and Twelve

Response Summary:	Frequency (%) Gr 8	Gr12
a. Detailed evidence on both sides	15	23
b. Vague reference that two sides will be presented	15	17
c. Evidence of one side presented	32	27
d. Completion of article	22	15
e. Irrelevant	6	12
f. Blank	10	6

a. I'd expect an explanation of the two positions: believers and skeptics. There would be some eyewitness accounts from believers and some really cynical remarks from the skeptics about how it's all a publicity stunt to get people to come and spend money at the lake. Judging from the title, the article would probably end with some sort of corny restatement of the first two sentences. (Gr 12)

b. Choppy sentences, full of nonsense facts conjured up by a struggling journalist trying to make a name for himself. His facts appear to be based on poor conjecture and mere hearsay of town folk, as can be seen by the "cash register" sentence. (Gr 12)

c. A description of the monster should be in the article, the size and color, why it likes warm water or why it prefers the ringing of cash registers. (Gr 12)

d. The monster has been sighted many times by tourists and other people. (Gr 8)

Skeptics don't believe about the "Monster" and think that people around Lake Champlain are just trying to make a buck. But the people around Lake Champlain strongly believe in the so-called "Monster" and try to get people to come and see it. (Gr 8)

e. I would expect information concerning the economy and possible economic problems in the Lake Champlain territory. The monster is a symbol of misfortune and a struggling flow of money. (Gr 12)

When I Read

Based on what the poem says, describe several things the poet might do when reading a novel.

Reporting Category: Internal Evaluation
Grade Level: Eight

Response Summary:	Frequency(%)
a. Good discussion of becoming engrossed	36
b. Good discussion, but some misinterpretation	20
c. Literal interpretation	19
d. Irrelevant/inappropriate	21
e. Blank/ I don't know	6

Examples:

a. The poet probably reads very intensely. She probably doesn't stop until the story is over. This is why she says she is a diver and doesn't come up for air until the story is over. She also searches for a meaning or moral of the story she is reading. That is why she says she is a tracker and rover.

b. She reads fast because in the first two sentences she talks about being a runner and a racer and lots of speed. She finishes fast with time to spare then she really gets into it and dives right in and doesn't stop until she finishes the book. During the book she looks for interesting facts and information to get more into the book. Then she might read it again and find something she didn't find the first time she read it.

c. The poet might like to explore the book to find out every little item. The poet might like to run a lot and relax in a swimming pool or something while reading a novel. It might sound like the poet would go camping because it says "I'm an explorer and I always find something I didn't know was there."

d. See, instead of writing I plunge right in and until the story's over I don't come up for air. Mrs Morrison should of wrote "I plunge right in and don't come up for air till the story is over." I think it goes better like that. The way she had it didn't make sense.

Potatoes

Reporting Category: Internal Analysis
Grade Level: Eight and Twelve

Response Summary:	Frequency (%)	
	Gr 8	Gr 12
a. Appropriate	47	73
b. Repeats or summarizes story	19	17
c. Irrelevant, inappropriate	25	7
d. Blank / I don't know	9	3

Examples (Grade 8):

a. Antoine Parmentier understood that if you take something (even potatoes)out of man's reach, he will turn all efforts towards achieving that one thing – i.e., put a guard on a potato field and potatoes become very valuable all of the sudden.

The people thought it must have been something really good and expensive. But it was just potatoes.

He knew that people were curious and would want to see what the soldiers were guarding.

b. He had planted potatoes in a garden and a lot of guards watched the garden. When the guards left they stole the potatoes. The reason why they did this is because that's the only way they would eat the potatoes.

c. He knew if they thought they were good they would eat them.

If you have almost nothing, then you should try it. Or try it you might like it.

He shows that humans are just like animals to and have to eat but are at a higher intelligence level.

The Cave / The Dreamer

Which boy seems to be more unhappy? Explain the reasons for your choice.

Reporting Category: Internal Evaluation
Grade Level: Eight

Response Summary:

a. Gives reason, referring to either boy's feelings, unpleasant surroundings and/or large amount of time spent.

The boy in "The Dreamer" seems more unhappy because the poem states the reason for the boy's troubles and emphasizes his gladness to "get away from it all!"

The dreamer seems to be more unhappy because it says as though God was to say: "Even at your age, you could do better." He seems as though everyone hates him, probably even God.

The boy in the poem The Dreamer seems to be more unhappy. He seems to be more unhappy because he thinks he can do better and that makes him very unhappy.

The boy who went to the cave. Because he felt lonesome and would just sit in the cave doing nothing.

b. Compares the two poems:

The dreamer was more unhappy because in "The Cave" it says that *sometimes* when the boy was troubled he'd go to a little cave, meaning he wasn't troubled all the time. But in "The Dreamer" it says he spent his childhood hours in a den, meaning he was unhappy most of the time.

c. Gives generalized reasons:

The Dreamer seems more unhappy because he explains it in an unhappy way.

d. Misunderstands poem:

The Dreamer because he has to stay in all the time instead of maybe going out.

The boy in The Dreamer because he spent his childhood in a den of rushes watching the gray rain braille the surface of the river.

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- *Science in the Elementary Schools*
- *Moving Geometry from the Back of the Book: A Report on Geometry and Measurement in the 1986 Assessment*
- *Social Studies Report*
- *On Their Own: Student Response to Open-Ended Tests in Reading*
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